

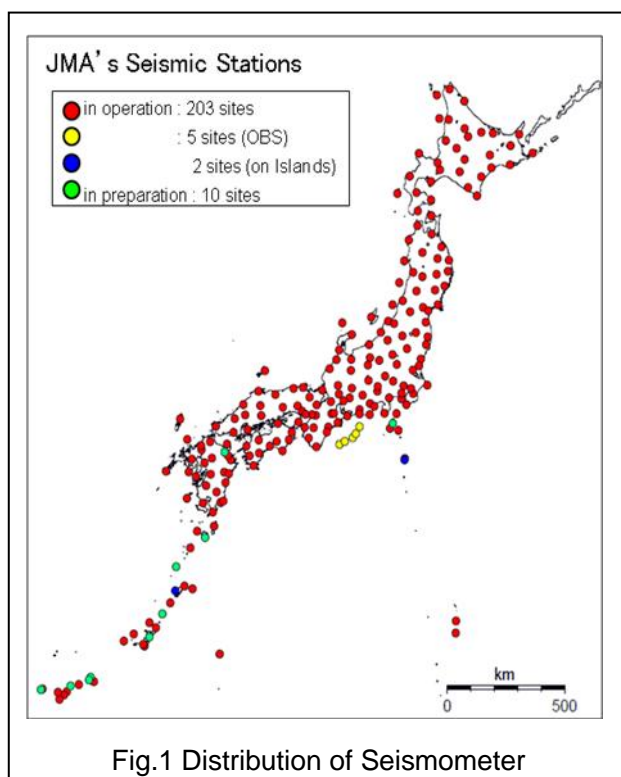
## Disaster mitigation system in Japan (2)

### - Earthquake and Tsunami Warning/Information in Japan -

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Japan has been constantly threatened by earthquake. The earthquake which can be felt by residents occurs over 2,000 times in a year. It reaches over 100,000 times if they include small events. Unfortunately, they contain several earthquakes which cause severe damage.

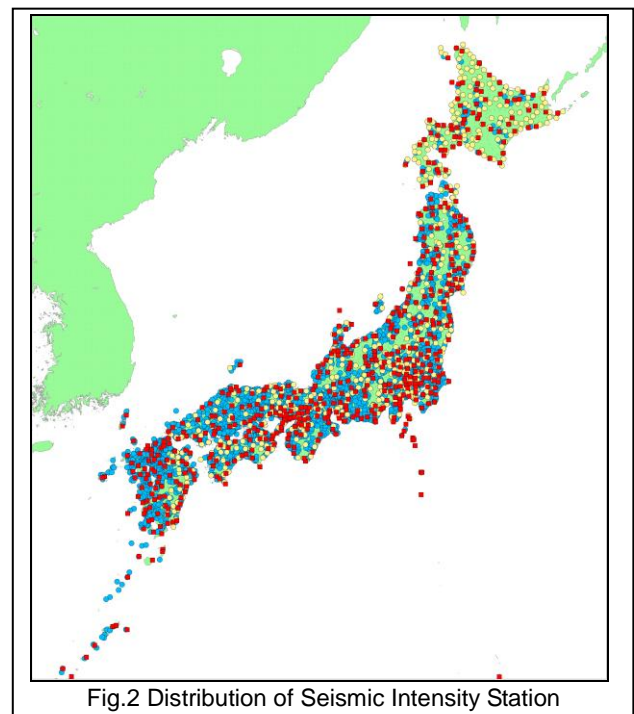
Japan Meteorological Agency (JMA) has established the system which issues warning / information quickly after earthquake occurred. It is achieved through over 200 high performance seismometers and a reliable transport network (Fig.1). Now it is possible to release earthquake and tsunami warning / information in less than three minutes after the earthquake occurred.



Earthquake warning / information consists of two types of message. One is Earthquake Early Warning

(EEW), seismic intensity information is another. EEW contribute greatly to mitigate disaster. Seismic intensity information contributes to estimating damage of earthquake, and this estimation gives the degree of recovery necessity at the time immediately after earthquake. It is very important that rapid initial response prevent the spread of the disaster.

Seismic intensity information is issued by using observed intensity at monitoring station which has been installed in the whole country over 4,000 points (Fig.2). The monitoring stations are connected to JMA with telecommunication lines and satellite lines. They will send intensity (degrees of damage) to JMA within a few minutes after earthquake.



In order to prevent tsunami disaster, Tsunami Warning is provided before tsunami reaches at the coast. The warning tells the estimated height and expected arrival

time of tsunami. This information is based on the result of numerical simulation. In the case of major earthquake occurring at the seafloor, JMA estimates the height of tsunami by referring the database of

simulation result. If tsunami is expected to exceed the threshold, warning is issued to the area. This sequence will be completed within approximately three minutes after earthquake (Fig.3).

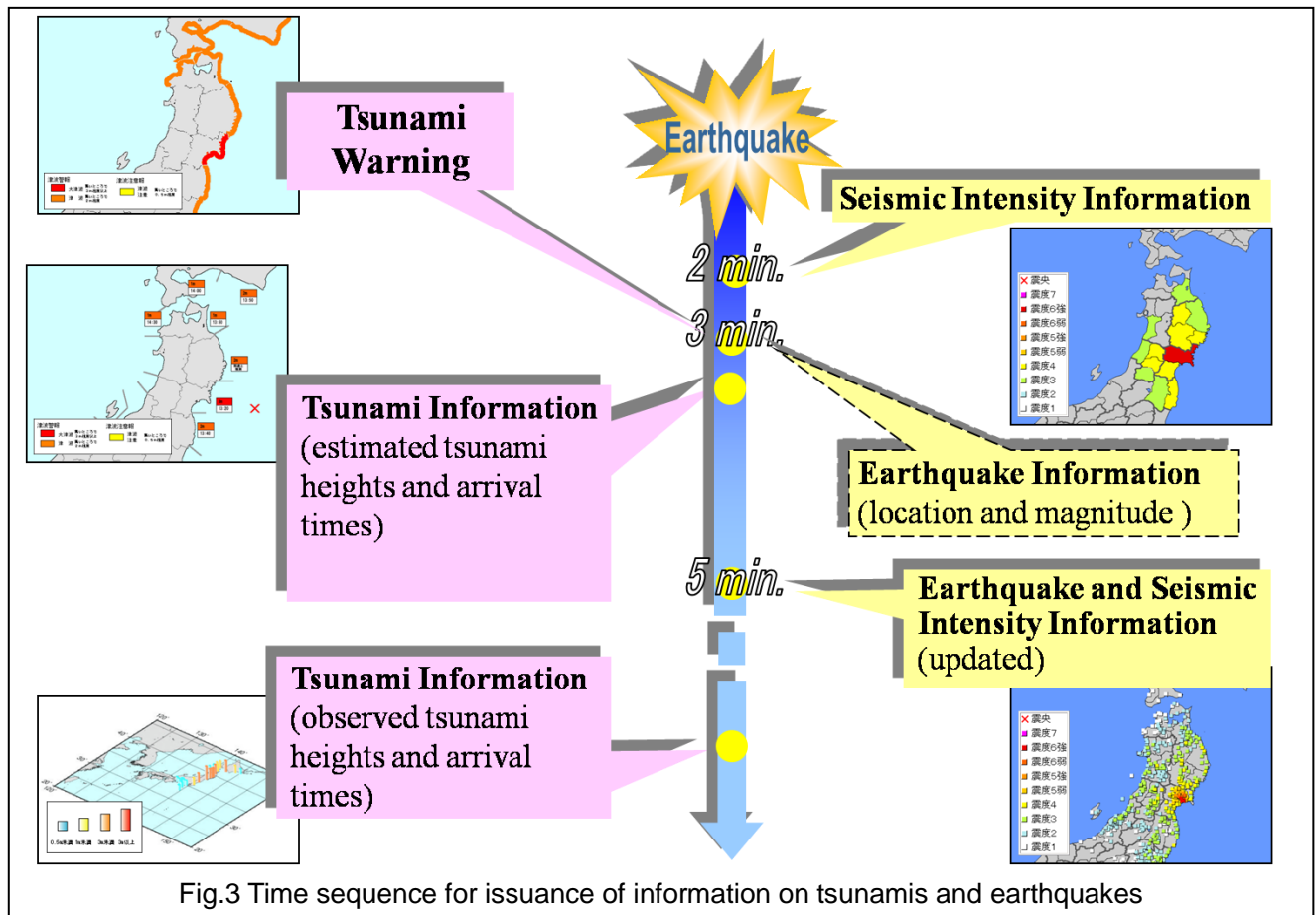


Fig.3 Time sequence for issuance of information on tsunamis and earthquakes